

DOCKET NO: 240441US0

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

IN RE APPLICATION OF :  
HAJIME IKUNO, ET AL. : EXAMINER: MORILLO, J.  
SERIAL NO: 10/620,388 : GROUP ART UNIT: 1793  
FILED: JULY 17, 2003 : RCE FILED: JULY 17, 2008  
FOR: PISTON MADE OF ALUMINUM :  
CAST ALLOY AND METHOD OF  
MANUFACTURING THE SAME

FIFTH DECLARATION UNDER 37 C.F.R. § 1.132

COMMISSIONER FOR PATENTS  
ALEXANDRIA, VIRGINIA 22313

SIR:

I, Hajime Ikuno, a citizen of Japan, hereby declare and state that:

1. I have a Master's degree in metallic material engineering, which was conferred upon me by Osaka University located in 2-1 Yamadaoka, Suita, Osaka, Japan.
2. I have been employed by Toyota Central Research & Development Laboratories, Inc., since 1985 and I have over 22 years of work and research experience in the field of metallic materials.

3. In the Second Declaration Under 37 C.F.R. § 1.132 filed November 7, 2007, the magnification is the same for each of the figures and is shown on the page with Figs. 5-8, 12-17 and 20-25.

4. In the Second Declaration Under 37 C.F.R. § 1.132 filed November 7, 2007, the experimental conditions used to create Tables 9, 10 and 11 of the specification were used to produce the figures in the Declaration. The conditions used to create Tables 9, 10 and 11 are described in the specification as follows:

... [T]he sample members has been cast by a method of casting similar to the case of Example 1, and subsequently, it has been stood to cool to the level of room temperature. Specification at page 44, lines 21-23; page 47, lines 8-11; page 49, lines 9-11

The method of casting of Example 1 is described in the specification as follows:

First, the respective aluminum alloys having a chemical composition as indicated in Tables 1-4 were melted. The molten metal temperature is set at 740-760 °C, after deoxidizing treatment has been provided by adding a fluxing agent, vacuum degassing treatment for retaining for 20 minutes under the vacuum has been provided. Subsequently, the above-described molten metals were poured into the boat mould for collecting JIS No.4 test pieces at room temperature on which BN (Boron nitride) has been coated on its surface. The pouring temperature is 700 °C +/- 20°C. It should be noted that the boat which was cooled to room temperature was used after the boat has been previously heated by a burner and water content has been removed. Specification at page 29, line 19 to page 30, line 3.

The figures in the Second Declaration Under 37 C.F.R. § 1.132 filed November 7, 2007, were produced under these conditions.

5. In the Third Declaration Under 37 C.F.R. § 1.132 filed June 27, 2008, the magnification is the same for each of the figures and is shown on the page with the figures identified as "0.005P", "0.015P", "11Si", "13.5Si", "18Si" "21Si" and "Comparative sample A3", and on the page with the Table.

6. In the Third Declaration Under 37 C.F.R. § 1.132 filed June 27, 2008, the experimental conditions used to create Tables 9, 10 and 11 of the specification were used to produce the figures in the Declaration. The conditions used to create Tables 9, 10 and 11 are described in the specification as follows:

... [T]he sample members has been cast by a method of casting similar to the case of Example 1, and subsequently, it has been stood to cool to the level of room temperature. Specification at page 44, lines 21-23; page 47, lines 8-11; page 49, lines 9-11

The method of casting of Example 1 is described in the specification as follows:

First, the respective aluminum alloys having a chemical composition as indicated in Tables 1-4 were melted. The molten metal temperature is set at 740-760 °C, after deoxidizing treatment has been provided by adding a fluxing agent, vacuum degassing treatment for retaining for 20 minutes under the vacuum has been provided. Subsequently, the above-described molten metals were poured into the boat mould for collecting JIS No.4 test pieces at room temperature on which BN (Boron nitride) has been coated on its surface. The pouring temperature is 700 °C +/- 20°C. It should be noted that the boat which was cooled to room temperature was used after the boat has been previously heated by a burner and water content has been removed. Specification at page 29, line 19 to page 30, line 3.

The figures in the Third Declaration Under 37 C.F.R. § 1.132 filed June 27, 2008, were produced under these conditions.

7. In the Fourth Declaration Under 37 C.F.R. § 1.132 filed March 26, 2009, the magnification is the same for each of the figures and is shown on the page with the figures identified as "1Ni", "1.8Ni", "2Ni", "2.3Ni", "2.5Ni" and "3Ni".

8. In the Fourth Declaration Under 37 C.F.R. § 1.132 filed March 26, 2009, the experimental conditions used to create Tables 9, 10 and 11 of the specification were used to produce the figures in the Declaration. The conditions used to create Tables 9, 10 and 11 are described in the specification as follows:

... [T]he sample members has been cast by a method of casting similar to the case of Example 1, and subsequently, it has been stood to cool to the level of room temperature. Specification at page 44, lines 21-23; page 47, lines 8-11; page 49, lines 9-11

The method of casting of Example 1 is described in the specification as follows:

First, the respective aluminum alloys having a chemical composition as indicated in Tables 1-4 were melted. The molten metal temperature is set at 740-760 °C, after deoxidizing treatment has been provided by adding a fluxing agent, vacuum degassing treatment for retaining for 20 minutes under the vacuum has been provided. Subsequently, the above-described molten metals were poured into the boat mould for collecting JIS No.4 test pieces at room temperature on which BN (Boron nitride) has been coated on its surface. The pouring temperature is 700 °C +/- 20°C. It should be noted that the boat which was cooled to room temperature was used after the boat has been previously heated by a burner and water content has been removed. Specification at page 29, line 19 to page 30, line 3.

The figures in the Fourth Declaration Under 37 C.F.R. § 1.132 filed March 26, 2009, were produced under these conditions.

9. I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of this application or any patent issuing thereon.

10. Further declarant saith not.

Date: October 14, 2009

Hajime Ikuno  
Hajime Ikuno